

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Structural Design Tech I	OFFICE/BRANCH/SECTION DES/Bridge Design	
WORKING TITLE Detailer	POSITION NUMBER 559-240-3038-049	REVISION DATE 05/01/2023

As a valued member of the Caltrans leadership team, you make it possible for the Department to provide a safe and reliable transportation network that serves all people and respects the environment.

GENERAL STATEMENT:

This is the entry and first journey level of the series. Under the general direction of a Senior Bridge Engineer and/or lead person, the incumbent prepares simple drawings and assists in the preparation of complete design, construction, and as-built drawings for a variety of structures.

CORE COMPETENCIES:

As a Structural Design Tech I, the incumbent is expected to become proficient in the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, Strategic Imperatives and Goals. Effective development of the identified Core Competencies fosters the advancement of the following Leadership Competencies: Change Commitment, Risk Appetite, Self-Development/Growth, Conflict Management, Relationship Building, Organizational Awareness, Communication, Strategic Perspective, and Results Driven.

- **Flexibility and Managing Uncertainty** : Adjusts thinking and behavior in order to adapt to changes in the job and work environment. (Cultivate Excellence - Engagement, Pride)
- **Dealing with Ambiguity (Risk)**: Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Strengthen Stewardship and Drive Efficiency - Innovation)
- **Reliability**: Ability to demonstrate dependability in meeting commitments, and providing a consistent work product. Takes responsibility for individual actions in order to meet deadline demands. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Problem-solving and Decision-making** : Identifies problems and uses logical analysis to find information, understand causes, and evaluate and select or recommend best possible courses of action. (Strengthen Stewardship and Drive Efficiency - Engagement, Innovation)
- **Relationship Building**: The ability to develop and maintain internal and external trust and professional relationships, which includes listening and understanding to build rapport. (Strengthen Stewardship and Drive Efficiency - Engagement, Equity, Integrity)
- **Organizational Awareness**: Contributes to the organization by understanding and aligning actions with the organization's strategic plan, including the mission, vision, goals, core functions, and values. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Communication**: Expresses oneself clearly in all forms of communication. Gives feedback and is receptive to feedback received. Knows that listening is essential. Keeps others in the Division and other functional units informed as appropriate. (Cultivate Excellence - Engagement)
- **Planning and Results Oriented**: Organizes and executes work to meet organizational goals and objectives while meeting quality standards, following organizational processes, and demonstrating continuous commitment. (Strengthen Stewardship and Drive Efficiency - Integrity)
- **Computer literacy and application**: Appropriate knowledge of computer applications and other tools necessary to successfully perform tasks. (Strengthen Stewardship and Drive Efficiency - Integrity)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	
45% E	Assists engineers in the preparation of a complete set of construction contract drawings for a variety (e.g.: concrete, steel, masonry and timber) of average difficulty structures (e.g. bridges, retaining walls, sound walls, and other structures) based on data supplied by the engineer and/or engineer's design notes and sketches. Utilizes state-of-the-art technologies including Computer-Aided-Drafting/Design (CADD), Revit, Civil 3D, SketchUp, Building Information Modeling (BIM) tools, and other related programs, to assist in the development of details, layout and geometric design, and to assist in electronically submitting plans to Office Engineer.

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25%	E	Makes engineering calculations as required for horizontal and vertical alignment and dimensions for layout of average difficulty structures based on data supplied by the engineer and/or engineer's design notes and sketches.
15%	E	Makes preliminary layouts of various types of structures for planning studies using state-of-the-art technologies including Computer-Aided-Drafting/Design (CADD), Revit, Civil 3D, SketchUp, Building Information Modeling (BIM) tools, and other related programs.
10%	E	Calculates and checks quantities for preliminary estimates of structure costs based on the General Plan and final estimates of structure costs based on a set construction contract drawings.
5%	M	Completes as-builts corrections based on data supplied by the Structure Construction representative and/or the Project Engineer, by using state-of-the-art technologies including Computer-Aided-Drafting/Design (CADD) and Building Information Modeling (BIM) tools.

¹ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.

MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

None

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of:

- Common details, methods of layouts used in preparation of structural design, construction drawings and as-builts for a variety of structures of average difficulty.
- Basic engineering mathematics; simple quantity estimates.
- State-of-the-art technologies including Computer-Aided-Drafting/Design (CADD), Revit, Civil 3D, SketchUp, Building Information Modeling (BIM) tools, and other related programs used to determine layout, detail drawings and create geometric design for various types of structures.

Ability to:

- Communicate both orally and in writing.
- Follow oral and written directions.
- Draft neat, accurate and legible plans of average difficulty.
- Interpret sketches, drawings and plans encountered in the work.
- Prepare and check quantity estimates.
- Use state-of-the-art technologies including Computer-Aided-Drafting/Design (CADD), Revit, Civil 3D, SketchUp, Building Information Modeling (BIM) tools, and other related programs.
- Make basic engineering calculations; plot data from field notes.
- Prepare charts and graphs.
- Use mathematical calculations and interpretation of the survey notes and computer alignment output preparing General Plans, site data and locating specific abutments and bents.

Analytical Requirements:

- Use of trigonometric calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents.
- Must be thoroughly informed in regard to information available from standards.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The incumbent exercises judgment in the selection of views and standard plans and details used in the preparation of a complete set of plans, which could result in incomplete information in the contract plans and estimates. Incomplete information in the contract plans and estimates could result in unnecessary rework, increased cost and time to produce corrected plans, and possible delay of the project.

PUBLIC AND INTERNAL CONTACTS

Employee maintains communications, generally through the Project Engineer, with various personnel working on the project to which he/she is assigned, including other Department personnel, engineering consultant and industry representatives to transmit or obtain relevant engineering information. These contacts will be verbal or written, as needed to perform one's assignments.

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PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Employee may be required to sit for long periods of time using keyboard and mouse. May also be required to lift/move/carry large or cumbersome plans (maximum of 50 pounds). They may be required to lift/move/carry various types of portable equipment, which may weigh up to 50 pounds, around the work site or when out in the field.

WORK ENVIRONMENT

Employee will work in a climate-controlled office under artificial lighting. Employees may also be required to travel to job sites and may be exposed to dirt, noise, uneven surfaces and/or extreme heat or cold.

I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

EMPLOYEE (Print)

EMPLOYEE (Signature)

DATE

I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)

SUPERVISOR (Signature)

DATE